What is claimed is:

1. A control system for an automotive vehicle having a vehicle body comprising:

a first angular rate sensor generating a first angular rate signal corresponding to a first angular motion of the vehicle body;

a second angular rate sensor generating a second angular rate signal corresponding to a second angular motion of the vehicle body;

a lateral accelerometer generating a lateral acceleration signal corresponding to a lateral acceleration of a center of gravity of the vehicle body;

a longitudinal accelerometer generating a longitudinal acceleration signal corresponding to the longitudinal acceleration of the center of gravity of the vehicle body;

a wheel speed sensor generating a wheel speed signal corresponding to a wheel speed of the vehicle; and

a controller coupled to said first angular rate sensor, said second angular rate sensor, said lateral accelerometer, said longitudinal accelerometer, and said wheel speed sensor, said controller determining a global roll attitude and a global pitch attitude from the first angular rate signal, and the second angular rate signal, lateral acceleration signal and the longitudinal acceleration signal, said controller determining a roll gradient based upon a past raw roll rate and current raw roll rate, the first angular rate signal or the second angular rate signal and the lateral acceleration signal, a pitch gradient based upon a past raw pitch rate and current raw pitch rate the first or

second angular rate signal and the longitudinal acceleration signal, determining a relative roll and relative pitch as a function of the roll gradient and the pitch gradient.

2. A system as recited in claim 1 wherein said first angular rate sensor is one selected from the group of a yaw rate sensor, a pitch rate sensor and a roll rate sensor and said second angular rate sensor comprises is one selected from the group of a yaw rate sensor, a pitch rate sensor and a roll rate sensor, said second sensor being different than the first sensor.

3. A control system for an automotive vehicle having a vehicle body comprising:

a roll angular rate sensor generating a roll angular rate signal corresponding to an roll angular motion of the vehicle body;

a yaw angular rate sensor generating a yaw motion signal corresponding to a yaw motion of the vehicle body;

a lateral accelerometer generating a lateral acceleration signal corresponding to a lateral acceleration of a center of gravity of the vehicle body;

a longitudinal accelerometer generating a longitudinal acceleration signal corresponding to the longitudinal acceleration of the center of gravity of the vehicle body;

a wheel speed sensor generating a wheel speed signal corresponding to a wheel speed of the vehicle; and

a controller coupled to said roll angular rate sensor, said yaw angular rate sensor, said lateral

accelerometer, said longitudinal accelerometer, and said wheel speed sensor, said controller determining a global roll attitude and a global pitch attitude from the roll rate, lateral acceleration signal and the longitudinal acceleration signal, determining a pitch rate in response to said first angular rate signal, said second angular rate signal, said lateral acceleration signal, said longitudinal acceleration signal, and said wheel speed signal, said controller determining a roll gradient based upon a past raw roll rate and current raw roll rate, the roll angular rate signal and the lateral acceleration signal; a pitch gradient based upon a past raw pitch rate and current raw pitch rate the calculated pitch angular rate signal and the longitudinal acceleration signal, determining a relative roll and relative pitch as a function of the roll gradient and the pitch gradient.

4. A control system as recited in claim 3 further comprising a safety system coupled to said controller, said controller generating a control signal to said safety system in response to said the relative roll angle, the relative pitch angle, the global roll and the global pitch angle.

5. A control system as recited in claim 4 wherein said safety system comprises an active brake control system.

6. A control system as recited in claim 4 wherein said safety system comprises an active rear steering system.

7. A control system as recited in claim 4 wherein said safety system comprises an active front steering system.

8. A control system as recited in claim 4 wherein said safety system comprises an active anti-roll bar system.

9. A control system as recited in claim 4 wherein said safety system comprises an active suspension system.

10. A method of controlling a rollover system for a vehicle body of an automotive vehicle comprising:

measuring a roll rate of the vehicle body;

measuring a lateral acceleration of the vehicle body;

measuring a longitudinal acceleration of the vehicle body;

measuring a yaw rate of the vehicle body;

determining a calculated pitch rate signal from the yaw rate, the roll rate, the lateral acceleration and the longitudinal acceleration;

determining a global roll attitude and a global pitch attitude from the calculated pitch angular rate, the roll rate, lateral acceleration and the longitudinal acceleration;

determining a roll gradient based upon a past raw roll rate, the roll rate signal and the lateral acceleration signal;

determining a relative roll angle based upon said roll gradient;

determining a pitch gradient based upon a past raw pitch rate and calculated pitch rate and the longitudinal acceleration signal;

determining a relative pitch angle based upon said pitch gradient; and

activating a safety device in response to the relative roll angle, the relative pitch angle, the global roll and global pitch angle.

11. A method as recited in claim 10 wherein determining a relative pitch angle comprises determining a relative pitch angle using an Euler approximation.

12. A method as recited in claim 10 wherein determining a relative roll angle comprises determining a relative roll angle using an Euler approximation.

13. A method as recited in claim 10 wherein said step of activating a safety device comprises one selected from the group consisting of an active brake control system, an active rear steering system, an active front steering system, an active anti-roll bar system, and an active suspension system.

14. A method of controlling a safety system for a vehicle body of an automotive vehicle comprising:

measuring a roll rate of the vehicle body;

measuring a lateral acceleration of the vehicle body;

measuring a longitudinal acceleration of the vehicle body;

measuring a yaw rate of the vehicle body; and

determining relative roll angle, the relative pitch angle, the global roll and global pitch angle in response to the roll rate, the yaw rate, the lateral acceleration and the longitudinal acceleration.